

We claim:

1. A back construction for a seating unit comprising:
a flexible back panel configured to support a seated user's torso; and
a bladder attached to the flexible back panel so that when the bladder expands in one direction and simultaneously shortens in a different direction, the back panel is flexed to a different shape.
2. The back construction defined in claim 1, wherein the bladder is elongated, and wherein the different direction that shortens extends parallel a length of the elongated bladder.
3. The back construction defined in claim 2, wherein the one dimension is parallel a thickness direction.
4. The back construction defined in claim 3, wherein the length extends in a vertical direction.
5. The back construction defined in claim 1, wherein the bladder includes multiple pleats that extend in a direction perpendicular to the different direction.
6. The back construction defined in claim 5, wherein the pleats extend horizontally.
7. The back construction defined in claim 1, including a fluid pump operably connected to the bladder.
8. The back construction defined in claim 1, wherein the back panel includes a lumbar section that is flexible.
9. The back construction defined in claim 8, wherein the back panel includes a stiff top section and a stiff bottom section connected together by the lumbar section.

11. The back construction defined in claim 1, wherein the bladder extends vertically from top to bottom of the back shell, but extends only partially horizontally across the back shell.

12. The back construction defined in claim 1, wherein the bladder is removably attached to the back shell.

13. The back construction defined in claim 12, including a cover assembly having a sock top shaped to slide onto and engage a top of the back shell.

14. The back construction defined in claim 13, wherein the cover assembly includes a releasable bottom connector shaped to releasably engage a bottom of the back shell.

15. The back construction defined in claim 1, including a cover assembly with angled side edges extending non-parallel to side edges of back shell, the cover assembly being attached to the back shell and incorporating the bladder.

16. The back construction defined in claim 1, wherein the bladder is riveted to the back shell.

17. The back construction defined in claim 1, wherein the bladder includes multiple layers, at least one structural layer being flexible but non-stretchable and providing strength, and at least one elastic layer being flexible and air-impermeable to provide an air-receiving cavity.

18. The back construction defined in claim 17, wherein the at least one structural layer includes nylon, and the at least one elastic layer includes urethane.

19. The back construction defined in claim 1, including an air pump operably connected to the bladder.

20. A back construction for a seating unit comprising:

a rigid back frame;

a flexible back panel attached to and supported by the back frame at spaced-apart points; and

5 a constrictable energy mechanism operably coupled to the flexible back panel at spaced-apart locations so that, when the energy mechanism is energized and constricts, the back panel is flexed to a different shape.

21. The back construction defined in claim 20, wherein the back panel is slidably attached to the back frame at a bottom location.

22. The back construction defined in claim 20, wherein the energy mechanism includes an inflatable bladder.

23. The back construction defined in claim 22, wherein the bladder includes transverse pleats subdividing a length of the bladder into a plurality of sub-compartments.

24. The back construction defined in claim 20, wherein the back panel includes a front surface, and the energy mechanism is laid on and against the front surface.

25. A shape-changeable component for a furniture unit comprising:

a flexible plastic panel having a curvilinear surface;

an inflatable member operably attached to the plastic panel and lying on the curvilinear surface so that when the inflatable member expands in one direction and simultaneously
5 shortens in a different direction, the plastic panel is flexed to a different shape.

26. The component defined in claim 25, wherein the plastic panel forms a seating unit usable for a back of an automobile seat.